

REMARKS

Applicants have carefully reviewed the Office Action mailed June 5, 2009, and thank Examiner Tolan for his detailed review of the pending claims. In response to the Office Action, Applicants have canceled claims 12, 14, 16, 18 – 20, 22, 24 – 27 and 29. Applicants have amended claims 1 and 11. By way of this amendment, no new matter has been added. Accordingly, claims 1, 10, 11, 13, 15, 17, 21, 23 and 28 remain pending in this application. At least for the reasons set forth below, Applicants respectfully traverse the foregoing rejections.

As Applicants' remarks with respect to the Examiner's rejections are sufficient to overcome these rejections, Applicants' silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, motivation to combine references, assertions as to dependent claims, etc.) is not a concession by Applicants that such assertions are accurate or such requirements have been met, and Applicants reserve the right to analyze and dispute such assertions/requirements in the future. Further, for any instances in which the Examiner took Official Notice in the Office Action, Applicants expressly do not acquiesce to the taking of Official Notice, and respectfully request that the Examiner provide an affidavit to support the Official Notice taken in the next Office Action, as required by 37 CFR 1.104(d)(2) and MPEP § 2144.03. Applicants respectfully request reconsideration of the present application in view of the above amendment and the following remarks.

Claim Rejections – 35 U.S.C. § 102

Claims 1 and 10-20 were rejected under 35 U.S.C. § 102(e) as being anticipated by Jahani et al. (U.S. Patent No. 7,412,866) (hereinafter, "Jahani"). Applicants respectfully traverse this rejection.

Jahani does not teach or suggest at least "providing a mandrel having diameters stepped over its length, including at least a first longitudinal section having a smallest first diameter and, adjacent to said first longitudinal section, a second longitudinal section having a second diameter being greater than said first diameter of said first longitudinal section, and, adjacent to said second longitudinal section, a third longitudinal section having a third diameter being greater than said

second diameter of said second longitudinal section, the mandrel comprising a first transition portion between said first longitudinal section and said second longitudinal section, the mandrel further comprising a second transition portion between said second longitudinal section and said third longitudinal section."

The Examiner states that Jahani discloses a method of manufacturing hollow shafts (22) having first (42) and second (38) end portions of greater wall thickness (T1, T5) and at least two intermediate portions (52,56,58,62) of reduced wall thickness. *See Office Action page 2, lines 14–16.* Applicants disagree, as Jahani disclose that the greater wall thicknesses are at items 52 and 58.

Contrary to the Examiner's contentions, Jahani teaches at most a mandrel, which is stepped over its length where "the outer diameter of the main body 104, although generally constant, is smaller in regions generally corresponding to either exterior bulge 54 or interior bulge 60. More specifically, in one embodiment, the main body 104 has a first reduced diameter section 114 corresponding to the shock absorber load region 58 and a second reduced diameter section 116 corresponding to the spring load region 52. The outer diameters Φ_2 , Φ_3 of the reduced diameter sections are smaller than the diameter Φ_1 . Each of these two reduced diameter sections is flanked by transitional regions 118 on each side." *See FIGS. 2, 5 and col. 6, lines 24–52.*

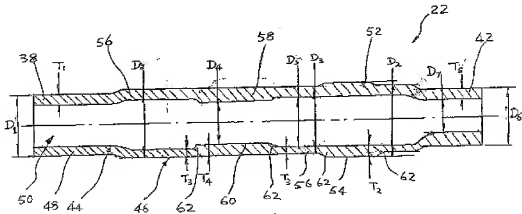


FIG. 2

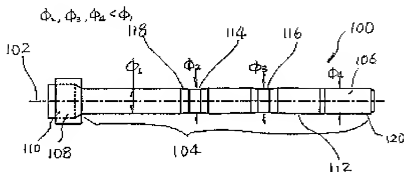


FIG. 6

Jahani thus discloses a hollow shaft, having an outside diameter D1 at a second end that is larger than any of the interior diameters with a wall thickness that varies in thickness along the length of the shaft, which is produced by the mandrel and having the greater thicknesses at the mid-section and the smaller thicknesses at the outer ends of the hollow shaft thus teaching away from Applicants independent claim 1. Jahani in no way teaches or suggests “a first longitudinal section having a smallest first diameter and, adjacent to said first longitudinal section, a second longitudinal section having a second diameter being greater than said first diameter of said first longitudinal section, and, adjacent to said second longitudinal section, a third longitudinal section having a third diameter being greater than said second diameter of said second longitudinal section.”

Further, claim 1, as amended also provides that “a wall thickness ratio between the first end portion of the hollow shaft and an intermediate portion having a smallest wall thickness is greater than 1.6.” These features are not shown or disclosed in Jahani. Jahani at most discloses “[T]he wall has varied wall thickness along the tubular article and includes at least one interior bulge and one exterior bulge for enhancing strength locally.” See *col. 2, lines 14 – 16*. These interior and exterior bulges are “high stress” areas 52 and 58 that support the spring load and the shock load thus, resulting in an area where the wall thickness of the tube is the greatest. Jahani merely teaches that these areas have a wall thickness that is greater than the regions of normal load. Therefore, Jahani does not provide a requirement that the “wall thickness ratio between the first end portion of the hollow shaft and an intermediate portion having a smallest wall thickness is greater than 1.6,” as claimed by Applicants’ independent claim 1.

For at least the foregoing reasons, claim 1 and claims 10 – 20, depending therefrom, are allowable over Jahani. Withdrawal of the rejection is respectfully requested.

Claim Rejections – 35 U.S.C. § 103

Claims 21 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jahani in view of Kaneko (U.S. Patent No. 6,758,077) (hereinafter, “Kaneko”). Applicants respectfully traverse the rejection. Applicants have canceled claim 22, therefore the rejection is moot.

As an initial matter, Applicants note that in the Office Action, the Examiner admitted that “Jahani does not disclose swaging or rolling.” See *Office Action*, Page 3.

Moreover, Claim 21 depends directly from claim 1. The remarks presented above with respect to the §102 rejection are equally applicable here. Specifically the inadequacy of Jahani to teach every element of independent claim 1 is also fatal to the Examiner’s §103 rejection. Additionally, Kaneko does not make up for the inadequacies described above in Jahani. Therefore, the combination of Jahani and Kaneko does not teach every recitation of claim 21, as required in *In re Royka*.

Claims 23-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jahani in view of Stump (U.S. Patent No. 4,161,112) (hereinafter, “Stump”). Applicants respectfully traverse the rejection. Applicants have canceled claims 24 – 27 and 29, therefore the rejection is moot.

Claims 23 and 28 depend directly from claim 1. The remarks presented above with respect to the §102 rejection are equally applicable here. Specifically the inadequacy of Jahani to teach every element of independent claim 1 is also fatal to the Examiner’s §103 rejection. Additionally, Stump does not make up for the inadequacies described above in Jahani.

In the Office Action, the Examiner also admitted that “Jahani does not disclose a cone angle of the mandrel and a wall thickness ratio.” See *Office Action* page 3. However, after admitting that Jahani does not anticipate claims 23 and 28, the Examiner stated that:

“Stump teaches a mandrel (11) having a cone angle (25) of 6 degrees (column 4, lines 32-35 and column 6, lines 20-22). Stump teaches a wall thickness ratio (column 6, lines 5-7) of greater than 1.6, $0.465/0.260 = 1.78$.”

Office Action, page 3. However, the Examiner's indicated motivation, "[I]t would have been obvious to one skilled in the art at the time of invention to provide the mandrel of Jahani with the cone angle as taught by Stump in order to produce shafts of a varying wall thickness," is insufficient to make a prima facie case of obviousness according to the standard as elucidated in *KSR v. Teleflex*. (*KSR International Co. v. Teleflex, Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007).) In *KSR*, the Court made clear that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." (*Id.* at 1731, 82 USPQ2d at 1389.)

The Supreme Court in *KSR* further stated that:

It can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.

(*Id.* at 1741, 82 USPQ2d at 1396.) Moreover, "the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit," and the "Federal Circuit has stated that 'rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" (See M.P.E.P. 2142.) However, no such reasoning is included in the Examiner's rejection. Under *KSR*, the Examiner must provide some reason to combine references (*id.* at 1741, 82 USPQ2d at 1396), which the Examiner has not done here. Here, the Examiner, without providing any evidence or support in the record, has simply made up a proposed benefit (a mandrel having a cone angle in order to produce shafts of varying wall thickness) and has not even explained how that benefit applies to Applicants' claims. When Stump's disclosed method of tube drawing utilizes an additional preliminary step of pre-forming the tube, unlike either the main reference Jahani or Applicants' claimed invention. Thus, the Examiner has failed to make a prima facie case of obviousness against claims 23 and 28, and for at least these reasons, the Examiner's rejection of claims 23 and 28 should be withdrawn.

Further, contrary to the Examiner's assertion, Office Action, page 3 Stump fails to teach or suggest "a wall thickness ratio between the first end portion of the hollow shaft and an intermediate portion having a smallest wall thickness is greater than 1.6," as recited in Applicant's independent claim 1. Stump at most teaches a single tube hollow undergoing multiple draw procedures reducing generally uniform outer diameter of 6 inches and an initial 0.490 inch wall thickness reduced down to a 3.51 inch outside diameter and a final 0.443 inch wall thickness after undergoing four drawing procedures. Thus, producing an initial wall thickness ratio of 1.36. *See col. 5, line 57 – col. 6, line 8.* This initial wall thickness ratio of 1.36, as taught by Stump, is clearly not "a wall thickness ratio between the first end portion of the hollow shaft and an intermediate portion having a smallest wall thickness is greater than 1.6." Instead, it is an initial ratio of the tube hollow as the tube progresses through a series of stretching deformations.

Therefore, for at least the forgoing reasons the combination of Jahani and Stump does not teach every recitation of claim 1, as required in *In re Royka* nor does the Examiner provide sufficient reason to combine the references as elucidated in *KSR v. Teleflex*. Accordingly, the §103 rejection of claims 23 and 28 depending from allowable independent claim 1, must be withdrawn. Withdrawal of the rejection is respectfully requested.

Conclusion

In view of the above amendment and remarks, the pending application is in condition for allowance. If, however, there are any outstanding issues that can be resolved by telephone conference, the Examiner is earnestly encouraged to telephone the undersigned representative.

It is believed no fees are due with this response. However, if any fees are required in connection with the filing of this paper that are not identified in any accompanying transmittal, permission is given to charge our Deposit Account No. 18-0013, under Order No. 66967-0054 from which the undersigned is authorized to draw. To the extent necessary, a petition for extension of time under 37 C.F.R. §1.136 is hereby made, the fee for which should also be charged to this Deposit Account.

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Respectfully submitted,

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